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(8-89)

United States Government **Department of Energy**

memorandum

DATE: June 7, 1999

REPLY TO ATTN OF: Office of Environmental Policy and Assistance (EH-413):Fortune:6-7302

SUBJECT: **Advance Notice of Proposed Rulemaking; Potential Revisions to the Land Disposal Restrictions Mercury Treatment Standards**

TO: **Distribution**

Purpose

The purpose of this memorandum is to notify DOE Program Offices and Field Organizations that EPA published an advance notice of proposed rulemaking (ANPRM) on May 28, 1999 regarding potential revisions to the Resource Conservation and Recovery Act (RCRA) land disposal restriction (LDR) treatment standards for mercury-bearing hazardous wastes. By way of this memorandum, we are requesting that DOE elements provide comments, and available supporting data and information (as appropriate), in response to the ANPRM.

Action

The Office of Environmental Policy and Assistance (EH-41) will coordinate the development of the consolidated Departmental response to the ANPRM. In order to meet the close of the official comment period, DOE elements are requested to provide their input to the RCRA/CERCLA Division (EH-413) on or before **Friday, July 9, 1999**.

In providing comments or data, please refer to the specific sections of the preamble or EPA request for comment to which your response or information pertains. Comments may be faxed to EH-41 at (202) 586-3915 or sent via the Internet to *william.fortune@eh.doe.gov*, with a signed hard copy to follow.

Background

The RCRA hazardous waste classification system includes six waste codes that contain mercury-bearing hazardous wastes [characteristic mercury waste (D009) and 5 listed wastes (U151, P065, P092, K071 and K106)]. Two general treatment subcategories have been established under the LDR regulations for mercury-bearing nonwastewaters: a high mercury subcategory (total mercury concentration $\geq$260mg/kg) and a low mercury subcategory (total mercury concentration $<$260 mg/kg). High mercury wastes are subject to the specified technology treatment standards of RMERC (roasting or retorting) or IMERC (incineration), with the residues from RMERC and IMERC required to meet concentration-based standards (0.20 mg/l and 0.025 mg/l, respectively). Low mercury wastes must meet a concentration-based standard of 0.025 mg/l. In addition, the regulations include two separate subcategories for mixed mercury D009 wastes: elemental mercury contaminated with radioactive materials which is subject to AMLGM (amalgamation), and hydraulic oil contaminated with mercury radioactive materials which is subject to IMERC.

EPA has undertaken several activities in recent years involved with examining the environmental and human health risks posed by mercury. In a November 1998 notice (11/9/98; 63 FR 60332), EPA identified mercury as one of the most persistent, bioaccumulative, and toxic (PBT) chemicals which may be found in RCRA hazardous wastes. Some evidence indicates that, because mercury is a PBT substance, small releases may contribute to the build up of mercury in the environment over time. As part of their efforts to address the

problem of mercury exposure, EPA is considering changing the LDR treatment standards applicable to mercury-bearing wastes (since mercury potentially can be released during the treatment and disposal of these wastes).

Summary of the ANPRM

This ANPRM provides advance notice of EPA's comprehensive reevaluation of the LDR treatment standards for mercury-bearing hazardous wastes. The ANPRM focuses on three key issues concerning the current LDR treatment standards for mercury-bearing wastes, and solicits additional data and comments on those issues.

Retorting – EPA has identified a trend suggesting that secondary mercury production may now and in the future exceed demand for the recycled product. In such a supply-demand situation, EPA believes thermal recovery by retorting (RMERC), which the existing LDR treatment standards mandate for most high mercury wastes, may not always be the best treatment option. Therefore, the ANPRM seeks comments and data for the following purposes:

- To identify wastes not amenable to RMERC and obtain information on problems that occur when such wastes are treated in retorting units.
- To determine whether land disposed residues from properly designed and operated non-thermal recycling processes should continue to be subject to a more stringent concentration-based standards than are RMERC residues (i.e., 0.025 mg/l for non-thermal recycling versus 0.20 mg/l for RMERC).
- To evaluate whether an adjustment is needed in the concentration of total mercury that now distinguishes high mercury wastes (i.e., 260 mg/kg).
- To evaluate whether non-recycling treatment options should be allowed for high mercury wastes.
- To evaluate whether mercury emissions from roasting/retorting processes can be further reduced.
- To evaluate whether the LDR treatment standard for high mercury hazardous debris should be changed to RMERC.

Incineration – EPA's original premises for establishing incineration (IMERC) as the LDR treatment standard for certain mercury-bearing hazardous wastes were that: (1) incineration would destroy any organic component or organomercury complexes in the waste; (2) high-mercury incineration residues would be retorted to recover mercury; and (3) other applicable regulations would ensure adequate control of mercury emissions. However, EPA has determined that, although incineration destroys organics, mercury is recovered from few if any incineration residues. Also, existing regulations neither eliminate mercury from the incineration feed stream nor require the use of emission control devices that efficiently capture and remove mercury. Therefore, the ANPRM seeks comments and data for the following purposes:

- To obtain information on mercury-bearing wastes that may continue to require incineration.
- To evaluate whether the volume of mercury-bearing wastes requiring IMERC can be reduced by requiring separation prior to incineration of mercury-bearing solids from all low mercury-organic wastes except those from which separation of mercury-bearing solids is not feasible.
- To identify and evaluate the performance of alternative treatment technologies for treating mercury-bearing wastes that are currently incinerated.

Source Reduction Options – EPA is aware that some companies have reduced or eliminated the amount of mercury in their waste by changing raw materials, equipment, process design, and maintenance activities. EPA considers this approach to be environmentally superior to merely complying with end-of-pipe LDR treatment standards. Therefore, the ANPRM seeks comments on the concept of a new two-part LDR treatment standard. The first part of the new standard would be a traditional end-of-pipe LDR treatment

standard derived from best demonstrated available technology. The second (and novel) part would be an optional, alternative standard involving process changes oriented to reduce either the volume of mercury-bearing waste produced or the concentration of mercury in the wastes. Companies would be allowed an extension of the LDR compliance date, or some other regulatory benefit, for choosing to comply with the second part of the two-part standard.

In addition to the three key issues mentioned above, the ANPRM describes treatability studies initiated by DOE's Mixed Waste Focus Area-Mercury Working Group (in conjunction with EPA). The studies are evaluating the use of non-RMERC technologies to treat high mercury wastes contaminated with radioactive materials for direct disposal. The ANPRM specifically requests comments on eliminating RMERC as the specified technology LDR treatment standard for high mercury mixed wastes. Instead, treatment of such wastes using one of the alternative technologies currently being investigated by EPA and DOE would be required, and a limit would be placed on the mercury concentration in any treatment residuals.

Availability of ANPRM

The ANPRM was published in the *Federal Register* at 64 FR 28949-28963, and can be accessed via the Internet on the EH-41 Website at:

http://homer.hsr.ornl.gov/oepa/rules/64fr28949.pdf

Contacts

If you have any questions regarding this ANPRM or request for comments, please contact Bill Fortune or Steve Woodbury of my staff at (202) 586-7302 or (202) 586-4371, respectively.

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